

## **Metabolic Reactions & Thermodynamics Video Presentation**

For this assignment you will make (by yourself or with a group up to 4 people) a video showing how the laws of thermodynamics drive metabolic reactions.

Reactions to present:

1.  $\text{ATP} \rightarrow \text{ADP} + \text{P}$       ATP Hydrolysis
2.  $\text{ADP} + \text{P} \rightarrow \text{ATP}$       ATP Production (Condensation)
3.  $\text{C}_6\text{H}_{12}\text{O}_6 \rightarrow 6\text{CO}_2$       Oxidation of glucose to carbon dioxide during cellular respiration
4.  $6\text{CO}_2 \rightarrow \text{C}_6\text{H}_{12}\text{O}_6$       Formation of glucose from carbon dioxide during photosynthesis

**Your presentation should include the following elements:**

- A. An introduction with discussion of what the 2 laws of thermodynamics are
- B. For each reaction above, please include the following elements:
  - The reaction name & equation shown above
  - The molecular structure of the reactant(s) & products(s)
    - You can draw them or cut out and show the templates I provide you with
  - The sign (+/-) of its enthalpy ( $\Delta H$ ), Entropy ( $\Delta S$ ) and Free Energy ( $\Delta G$ )
  - A logical explanation of the previous bullet point based on the molecular structures
  - Whether the reaction will be endergonic (non-spontaneous/require energy) or exergonic (spontaneous/release energy).

**Post your video in some format (YouTube, etc.) and embed on the class wikispace:**

1. Go to [nahsapbio.wikispaces.com](http://nahsapbio.wikispaces.com)
2. Click on "Metabolism Presentations" page
3. Click "Edit"
4. Click "Widget" and then "Video"
5. Upload your video from your source using the directions provided, then click save.
6. Save the wiki-page and your video should be embedded on the page.

### **Viewing & Discussion Board**

View videos of other groups in the class and write 1 comment on the discussion board on the page. Your comment should address a specific point of positive feedback about the content & style of one other presentation.

The videos & discussion board posts must be completed by Sunday night

**The page will become locked to editing at 8PM Monday 10/3**

All other elements of the presentation are up to you to decide (music or no music, funny or serious, people visible in the video or not, etc.) Appropriate behavior is an expectation though!

**The video is valued at 40 points and the discussion post is 10 points for a total assignment value of 50 points.**